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ABSTRACT

This field research report examined the efficacy of the Spectrum Assessment Model (SAM), a measure used to provide teachers and parents with a broad profile of preschool children's abilities, skills, and interests. The measure was developed by educators at Harvard and Tufts Universities in 1984 and assesses young children's cognitive abilities in mathematics, science, music, language, visual arts, movement, and social interaction. This study sought to determine preschool teachers' and parents' attitudes toward the SAM and teachers' ability to effectively utilize the measure without the assistance of researchers. Two teachers at the Winter Club Preschool in Lake Forest, Illinois, used the SAM to evaluate 20 students ages 3 through 5 over a 5-month period and discussed the results with the students' parents at parent-teacher conferences. Pre- and post-test parent surveys and post-test teacher surveys were conducted to measure both groups' attitudes toward the SAM. Results indicated that 74 percent of the parents thought the SAM was useful for the parent-teacher conferences. Both teachers felt the model provided a good basis for further development of curriculum and assessment models. Nine appendixes contain copies of the parent and teacher surveys, assessment profiles and activities, and correspondence with parents. (MDM)

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PARENTS' AND TEACHERS' ATTITUDES ABOUT THE USEFULNESS OF THE SPECTRUM ASSESSMENT MODEL AS A FRAMEWORK FOR PARENT-TEACHER CONFERENCES

By

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A field research report
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of the requirements for the degree of
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TABLE OF CONTENTS

Chapter		Page
I	Introduction	1
	Statement of the Problem	2
	Rationale	3
	Overview of the Study	7
	Definition of Terms	8
	Limitations	9
II	REVIEW OF THE LITERATURE	10
	Introduction	11
	Historical Overview of Intelligences and Assessment	11
	A Theoretical Framework for Examining Curriculum and Assessment for Preschoolers	21
	Project Spectrum: A Viable Model	23
	Conclusion	27
III	THE STUDY	28
	Introduction	29
	Methodology	30
	Findings and Interpretation	36
	Conclusion	47
REFERENCES		49
APPENDICES		55

CHAPTER I

INTRODUCTION

Statement of the Problem

The need for appropriate assessment of preschoolers has been identified in several studies (e.g., Gardner, 1991a; 1991b; Krechevsky, 1991; Leavitt & Eheart, 1991; NAEYC & NAECS/SDE, 1991). It has been found that parent-teacher conferences are an ideal place to share the assessment of a child, and are potentially the "single most educationally valuable event" for him/her (Rabbitt, 1978). Lotz and Suhorsky (1989) report that parents are increasingly concerned about communication among home, school, parents, and teacher. A conference provides an opportunity for both parent and teacher to evaluate the child and each other as well. According to Bjorkland and Burger (1987), the main purposes of parent-teacher conferences are to keep parents aware of their childrens' progress and to encourage parental involvement. These conferences hold such value, it is understandable that educators continue to seek better methods of assessment to enhance the content of the parent-teacher conferences.

Project Spectrum is a preschool assessment project which provides parents and teachers with a broad profile of a child's abilities, skills, and interests (Veins, 1990a). Project Spectrum began in 1984 at Harvard and Tufts Universities and continues under the direction of Howard Gardner and David Feldman (Ramos-Ford, Feldman & Gardner, 1988). This project has developed an assessment model which

is consistent with the Guidelines for Appropriate Curriculum Content and Assessment in Programs Serving Children Ages 3 Through 8 developed by NAEYC and NAECS/SDE (Gardner, 1991b).

In order to provide useful information on children's intellectual development, educators need sound methods of assessment useful to both teachers and parents. The Spectrum Assessment Model has been studied at Eliot-Pearson Preschool (Tufts University lab school) with the aid of researchers from Project Spectrum. Their findings have indicated that the model produces very useful information about children and is favorably received at parent conferences (Krechevsky, 1991; Ramos-Ford et al., 1988). However, their findings were limited to university based preschool settings. Can the Spectrum Assessment Model be a useful parent conference tool in preschool settings that are not in university settings? Are teachers able to implement the assessment model without the aid of researchers? The purpose of this study was to evaluate the usefulness of the Spectrum Assessment Model as a framework for planning and conducting parent-teacher conferences in a non-university setting. Would the Spectrum Assessment Model enhance the existing conference?

Rationale

The assessment of intelligence in preschoolers helps teachers and parents to better understand, appreciate, and

properly respond to the growth, development, and unique characteristics of each child (Leavitt & Eheart, 1991). Psychometric assessments are readily administered and provide standardized results but they fail to present a total picture of a child's intelligence and abilities (Gardner, 1991b; Gould, 1981; Krechevsky, 1991; Krechevsky & Gardner, 1990). Howard Gardner has extensively researched the theory of intelligence and has developed a theory which explores a broader spectrum of intelligence than has been presented by the psychometricians.

In his book, Frames of Mind, Howard Gardner (1983) puts forth a Theory of Multiple Intelligences. His theory proposes that humans have at least seven relatively autonomous intellectual capacities which he identifies as: logical-mathematical, linguistic, musical, spatial, bodily-kinesthetic, interpersonal, and intrapersonal. Hatch and Gardner (1990) posit a broader, more pluralistic view of intelligence. In order to measure these autonomous intelligences they propose an "intelligence-fair" assessment approach which departs from psychometric assessment instruments and focuses on a more naturalistic approach. Several schools in the United States are currently utilizing a multiple intelligence approach to curriculum and assessment (e.g. Key School, New City School, and Virginia Wheeler Elementary School). Project Spectrum, under the direction of Howard Gardner, continues to pilot the multiple

intelligence curriculum and assessment approach at the preschool level (Hoerr, 1992; Johnson, 1991; Krechevsky, 1991).

Project Spectrum

Project Spectrum departs from Piaget's stages of cognitive development to include the recognition of domain-specific strengths in seven areas (Ramos-Ford, Feldman, & Gardner, 1988). According to Veins (1990a), Project Spectrum seeks to provide parents and teachers with a broader profile of a child's abilities, skills, and interests in a naturalistic approach. The areas of cognitive ability examined are: numbers, science, music, language, visual arts, movement, and social (Krechevsky, 1991). Stylistic features, which are also examined, describe how a child interacts with the materials in each domain. Krechevsky (1991) identifies 18 stylistic features including: confident/tentative, playful/serious, persistent/frustrated, proud, curious about materials, and attentive to detail.

The assessment findings of both the cognitive and stylistic areas are compiled into an individual profile addressing the strengths and weaknesses within a child's own range of capabilities (Ramos-Ford et al., 1988). Ramos-Ford, Feldman, and Gardner (1988) report that the parent conference, based on the findings of the Spectrum Profile, is well received by parents and is of value in facilitating

communication between home and school. Krechevsky (1991) notes that the Spectrum approach identifies strengths not previously identified by parent or teacher.

Parent-Teacher Conferences

Many researchers have found parent-teacher conferences to be an effective means of communication between parents and teachers (e.g., Bjorkland & Burger, 1987; Canady & Seyfarth, 1979; Hertel, 1977; Leavitt & Eheart, 1991; Lotz & Suhorsky, 1989; Rabbitt, 1978; Rotter & Robinson, 1982). Bjorkland and Burger (1987) state, "both parent and teacher possess valuable information about a child's abilities, interests, likes, dislikes, and needs" (p. 26). Leavitt and Eheart (1991) believe that a conference involving parents and teachers will develop an in-depth picture of each child.

Parent-teacher conferences provide a sound format for evaluating the usefulness of teachers' assessment methods because both parents and teachers are actively involved in the conference process. According to Lotz and Suhorsky (1989), parents know what constitutes a meaningful conference and expect the teacher to provide them with important information about their child.

Project Spectrum began in 1984 to address the issue of assessment in preschoolers (Krechevsky, 1991; Ramos-Ford et al., 1988). It reports positive feedback from both parents and teachers in relation to parent-teacher conferences (Krechevsky, 1991). According to Krechevsky (1991), parents

are most surprised to learn of their child's strengths in music, mechanical ability, and creative movement. The Spectrum Assessment Model may provide a framework for preschool programs to utilize when planning and conducting parent-teacher conferences. If teachers can implement the Spectrum model successfully, resulting in parents and teachers expressing positive attitudes about parent-teacher conferences, the Spectrum approach may become more widely used. It merits extensive evaluation.

Overview of the Study

This evaluation study of the Spectrum Assessment Model was conducted at the Winter Club Preschool (a private not for profit program) in Lake Forest, Illinois. The Winter Club Preschool program resembles the Spectrum program in size, philosophy, educational background, and socioeconomic environment. The teachers at the Winter Club Preschool, however, had no previous experience with the Spectrum Assessment method and conducted the study without additional assistance.

The methods and materials provided in the Project Spectrum Activities Handbook (Feldman & Gardner, 1987) were used to conduct the assessment portion of the study. Although the teaching staff at the Winter Club Preschool had no reason to believe parents were dissatisfied with the current assessment approach, they nevertheless thought there

was value in examining the Spectrum Assessment Model. The purpose in evaluating the Spectrum Assessment Model was to see if it would enhance the existing parent-teacher conferences, and if the model was worthy of the time it required to implement and execute. Parents' and teachers' attitudes were assessed to measure the usefulness of the Spectrum Assessment Model.

Definition of Terms

Project Spectrum. Project Spectrum is a broad-based effort to identify the cognitive strengths and capabilities of preschool children. Its theoretical foundation is derived from Howard Gardner's Theory of Multiple Intelligences (Gardner, 1983) and David Feldman's (1980) research on cognitive development in non-universal domains.

Spectrum Assessment Model. The model includes the Project Spectrum approach to assessment and all of the activities and assessment methods as set forth in the Project Spectrum Activities Handbook (Feldman & Gardner, 1987).

Student Profiles. Student profiles are compiled of all of the information gathered on each child from the Spectrum Assessment Model. Project Spectrum refers to these as "Spectrum Profiles."

Theory of Multiple Intelligence. Howard Gardner's Theory of Multiple Intelligences proposes that humans have

at least seven relatively autonomous intellectual capacities (Blythe & Gardner, 1990; Gardner, 1983). Gardner and Hatch (1989) define the seven intelligences as: logical-mathematical, linguistic, musical, spatial, bodily-kinesthetic, interpersonal, and intrapersonal.

Limitations

The sample size utilized in this study was small. The number of parents did not exceed 40 and there were only two teachers involved. The teachers in the study knew many of the parents and have had previous contact with them. The familiarity of the teachers and the parents may have created a bias in the evaluation of the model.

The Project Spectrum approach usually necessitates compiling data for the "Spectrum Profile" over an entire school year. This study was conducted over a period of five months, but there was no time for a pilot study. Limiting the study to five months effected the teachers' ability to fully implement the Spectrum Assessment Model.

There is little research on the use of the Spectrum Assessment Model, to date. Project Spectrum continues to refine its assessment techniques in an effort to simplify the model. For the purpose of this study, the Project Spectrum Activities Handbook (Feldman & Gardner, 1987) was the only framework available. The handbook was too detailed for implementation in a five month-study.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

Intelligence is central to one's performance in school (Krechevsky & Gardner, 1990; Walters & Gardner, 1985). Assessment of intelligence in preschoolers helps teachers, caregivers, and parents better understand, appreciate, and properly respond to the cognitive growth, development, and unique characteristics of each child (Leavitt & Eheart, 1991). Assessment provides vital information for the growth and development of young minds. Gardner (1991a) believes that the intellectual profiles of children, their individual learning styles, and meaningful curriculum are interdependent. For the review of literature, an overview of how psychologists have defined and measured intelligence, will be provided. Then, a theoretical framework for evaluating different approaches to assessment of preschoolers will be given. Finally, Gardner's Project Spectrum will be discussed as one viable model for preschool assessment.

Historical Overview of Intelligence and Assessment

Man has sought to define and measure intelligence for hundreds of years. Sattler (1988) summarizes the historical landmarks in cognitive assessment from 2200 B.C. to 1986. To comprehend the scope of research addressing the meaning and the application of intelligence, this section will provide a survey of the nineteenth and twentieth century

psychologists who have had a lasting influence on intelligence assessment in society.

Early Intelligence Assessment

Howard Gardner (1991a) credits Charles Darwin with contributing more than anyone to the theory of intelligence. Darwin stimulated the scientific study of the child's mind in his studies as an observant parent and through his ideas about the evolution of the species. In 1870, Francis Galton was the first psychologically oriented scientist to try to measure the intellect directly.

Psychometric Assessment

From 1904-1933, Binet, Terman, Spearman, Thurstone, and Wechsler were among the psychometricians who developed intelligence assessments for practical application (Sattler, 1988). Their research led to viable intelligence tests, some still used today.

In 1905, Alfred Binet and Theodore Simon devised the Binet-Simon Scale, the first practical intelligence test (Sattler, 1988). Terman, an American psychologist, modified the Binet-Simon Scale. In 1916, he coined the well-known term IQ (intelligence quotient). His efforts led to the Stanford-Binet standardized form which is widely used today (Sattler, 1988). Lazear (1991) notes that Binet assumed intelligence was a single entity. He believes that Binet's intent was to identify those children who needed help in school, not to create a device for ranking normal children.

Gould (1981) considers the American use of the Binet-Simon Scale a major misuse of Binet's original intention.

Charles Spearman, an English psychologist, believed there was a single factor that was common to all the diverse mental functions. Spearman called this factor "general intelligence" but it is more commonly known as the g factor. According to Sattler (1988) Spearman felt all cognitive activity required access to his g factor.

In contrast to Spearman, Thurstone postulated seven relatively independent "vectors of mind": perceptual speed, numerical ability, word fluency, verbal comprehension, space, visualization, associative memory, and reasoning (Sattler, 1988). Both Spearman and Thurstone used factor analysis to analyze and refine assessments (Gould, 1981; Malkus, 1988;).

Wechsler was another prominent figure in the field of psychometric cognition. He too emphasized the global nature of intelligence and regarded it as part of the larger whole of personality. His intelligence scales are still in use (Sattler, 1988).

Standardized assessments have advantages; they are readily administered and provide standardized results. Some researchers (Gardner, 1991b; Gould, 1981; Hatch & Gardner, 1990; Krechevsky, 1991; Krechevsky & Gardner, 1990; Malkus, 1988; Sattler, 1988;) find however, that standardized tests are not without limitations. They contend that psychometric

assessments only measure logical, mathematical, and linguistic skills. They further contend that such assessments create anxiety in children. Psychometric psychologists represent one approach to cognitive intelligence. Developmental psychologists provide an alternative way for assessing cognitive intelligence.

Developmental Intelligence Assessment

Maturationists. Arnold Gesell is recognized as a founder of the maturationists theory. He de-emphasized environmental influences and advocated an orderly, chroniclized development of life's milestones (Gardner, 1991).

Behaviorists. John B. Watson and B. F. Skinner viewed cognitive development as a matter of conditioning. They believed success was measured by the ability to effect a specific desired behavior. Changes in cognition, posited Watson and Skinner, were due to changes in the environmental stimuli. According to Gardner (1991a), Watson and Skinner saw no qualitative differences between animals and humans or between child and adult in the way new abilities are acquired.

Jean Piaget. Jean Piaget, the Swiss psychologist, has had a strong impact on the field of science and education with his view of cognition. He defined intelligence as "a form of biological adaptation of the individual to the environment" (Sattler, 1988, p. 53). His model of

intelligence is hierarchial and includes the following stages: sensory motor, preoperational, concrete operational, and formal operational (Sattler, 1988).

Malkus (1988) states that Piaget departed from the concept of intelligence as a single entity that could rapidly be assessed through psychometric instruments. To the contrary, Piaget posited the existence of rich mental structures or "schemata" which undergo reorganization during the transition from one stage to the next. Piaget's goal was to document the universal patterns of intellectual growth (as cited in Malkus, 1988).

Piaget's research has had a lasting affect on educational practice. Contemporary researchers continue to study and use his theories to develop new assessment tools.

Current Approaches to Intelligence and Assessment

A number of prominent psychologists have made valuable contributions to our understanding of what constitutes intelligence. The work of Jean Piaget continues through the research of Neo-Piagetians Robbie Case and Kurt Fisher. Noam Chomsky, Eric Lenneberg, Norman Geschwind, and Alexander Luria have approached the development and assessment of the mind from a biological perspective. They emphasize the importance of the nervous system in human development. Soviet psychologist, Leo Vygotsky, along with Americans Jerome Bruner and Michael Cole, are most noted for

their research on culture as it applies to cognitive development.

Triarchic Theory. In Beyond IQ, Robert J. Sternberg (1985) proposes a triarchic theory of human intelligence. He divides intelligence into three sub-theories: A contextual sub-theory (adaptation to environment): an experiential sub-theory (intelligence applied to situations): and a componential sub-theory (internal mental processes). Sternberg views intelligence as a concept invented to provide a means of evaluating and ordering people in relation to their performance on tasks and situations valued by culture.

Sternberg theorizes that standardized assessments are unfair when used across different sociocultural groups. Current IQ tests, Sternberg states, lack some of the elements relevant to real world performance. Researchers use his theory in an effort to address this dilemma.

Theory of Multiple Intelligence. In his book, Frames of Mind, Howard Gardner (1983) puts forth a theory of multiple intelligences. He acknowledges the work of Sternberg and Piaget but feels his to be a more comprehensive theory. Gardner (1984) states that Sternberg's attempt to pluralize intelligence (triarchial theory) is actually a revitalization of Spearman's approach and focuses on intelligence as a single entity. Gardner (1991a) believes Piaget's theory of "universal development"

has much to contribute to cognitive theory but offers too narrow a focus. Piaget's theory may create a distorted view of intelligence.

Gardner (1983) presents a broader, more pluralistic and social view of intelligence. He defines intelligence as "the capacity to solve problems or fashion products which are valued in one or more cultural settings" (Hatch & Gardner, 1990, p. 417). Gardner's Theory of Multiple Intelligences (MI theory) proposes that humans have at least seven relatively autonomous intellectual capacities (Blythe & Gardner, 1990). Gardner & Hatch (1989) define the seven intelligences and core components as:

1. Logical mathematical intelligence is the sensitivity to, and capacity to discern, logical or numerical patterns; ability to handle long chains of reasoning.

2. Linguistic intelligence is the sensitivity to the sounds, rhythms, and meanings of words; sensitivity to the different functions of language.

3. Musical intelligence is the ability to produce and appreciate rhythm, pitch, and timbre; appreciation of the forms of musical expressiveness.

4. Spatial intelligence is the capacity to perceive the visual spatial world accurately and to perform transformations on one's initial perceptions.

5. Bodily-Kinesthetic intelligence is the ability to control one's body movements and to handle objects skillfully.

6. Interpersonal intelligence is the capacity to discern and respond appropriately to the moods, temperaments, motivations, and desires of other people.

7. Intrapersonal intelligence is the ability to access one's own feelings and the ability to discriminate among them and draw upon them to guide behavior; knowledge on one's own strengths, weaknesses, desires, and intelligences. (p.6)

Hatch and Gardner (1990) cite eight different criteria used to determine each intelligence. They believe the core components of an intelligence can serve widely different purposes. For example, Picasso had an uncanny ability to perceive and depict images in his art work while Einstein was able to utilize mental images to theorize physics. Hatch and Gardner (1990) believe it highly unusual to find a person who relies entirely on one intelligence domain. Gardner and Veins (1990) report that all normal humans possess each of the seven intelligences which vary only in combination and extent across individuals.

Brain research supports findings of independent existences and the relative autonomy of intelligences in the human nervous system (Gardner & Veins, 1990). In studies of savants and victims of autism, Gardner and Veins (1990) give validity to the claim of autonomous domains; the development of one domain in the face of otherwise non-existent abilities. The findings of Feldman (1980) show gifted children to be highly talented in one intellectual domain while average or sometimes below average in other areas. Feldman cites Martin Luther King, Charles Darwin, and Albert Einstein as individuals whose gifted intelligences defied the IQ notion of a general intellectual competence. Once

again criticism is raised regarding the reliability of standardized tests if taken at face value.

Hatch and Gardner (1990) propose "intelligence-fair" measures as useful alternatives to paper and pencil tests. They state, "intelligence-fair assessments engage the core components (separately or in consort) of particular intelligences" (p. 419). Hatch and Gardner believe this assessment approach diminishes the need for logical and linguistic abilities to be weighed so heavily. Gardner (1983) suggests that IQ tests are narrow instruments, useful only for certain kinds of linguistic and logical talents. He also argues for the need for "culture-fair" assessment. Through studies, Hatch and Gardner (1990) and Krechevsky and Gardner (1991) contend that intelligence is more fairly recognized while people are actively involved in meaningful activities that are familiar and valued within a culture. Gardner (1991b) and Ramos-Ford and Gardner (1990) provide detailed information on classroom assessment techniques. These techniques include observations, video tapes of children involved in learning activities, projects, and game playing.

Investigation of the assessment of multiple intelligences continues at Harvard-based Project Zero (Gardner & Hatch, 1989). The project, an inter-disciplinary research group, seeks to develop programs that integrate "intelligence-fair" assessment into the curriculum at a

variety of age levels. Hatch and Gardner (1990) report on programs that implement a multiple intelligence approach to curriculum and assessment. Arts Propel, for example, assesses growth and learning at the middle and high school level. The partners in this program are: Harvard Project Zero, the Educational Testing Service and the Pittsburgh public school system. Project Spectrum is a collaborative project at Harvard Project Zero in conjunction with David Feldman at Tufts University, and the staff and students of the Eliot-Pearson Children's School (Gardner, 1991b). Project Spectrum continues to pilot the approach in the early childhood years. These programs demonstrate some of the ways that ongoing feedback can be supplied through the learning process. In the process, teachers and students are given greater control over assessment (Hatch & Gardner, 1990).

The research of Howard Gardner and his associates at Project Zero (Gardner, 1991a; 1991b), focuses on natural learning patterns using the Theory of Multiple Intelligences. Their assessment methods require longitudinal studies and greater sample sizes, however, to gain validity (Krechevsky, 1991; Krechevsky & Gardner, 1990).

A Theoretical Framework For Examining Curriculum and Assessment For Preschoolers

In 1990 the National Association for the Education of Young Children (NAEYC) and the National Association of Early Childhood Specialists in State Departments of Education (NAECS/SDE) adopted Guidelines for Appropriate Curriculum Content and Assessment in Programs Serving Children Ages 3 Through 8 (NAEYC & NAECS/SDE, 1991). Within this detailed document specific guidelines are given for educators to direct them in the following areas: 1) decision making about appropriate curriculum content and assessment; 2) evaluation of existing curriculum and assessment practices; and 3) advocacy for more appropriate approaches.

Curriculum

NAEYC and NAECS/SDE (1991) explore curriculum in relation to theory, content, planning, and perspectives on learning and development. As a result of their extensive research, specific guidelines are put forth to guide the development of curriculum. NAEYC and NAECS/SDE state, "decisions about curriculum and assessment are among the most important decisions that educators make" (p. 28). To successfully make these decisions, childhood educators are mandated to know about current childhood development and learning practices. They also need a knowledge of individual children (i.e., what is age-appropriate and what is individually appropriate). The position taken by NAEYC and

NAECS/SDE (1991) is that curriculum content and assessment strategies are all inter-related and constitute the educational program. Further, NAEYC and NAECS/SDE (1991) state, "Assessment is integral to curriculum and instruction" (p. 32).

Assessment

NAEYC and NAECS/SDE (1991) believe that the purpose of assessment is: 1) to plan instruction and to communicate with parents; 2) a means to identify individual children who may require special needs or intervention; and 3) to evaluate how well a program meets its goals. NAEYC and NAECS/SDE provide a set of guidelines for each of these areas.

Curriculum and Assessment

Within its guidelines, NAEYC and NAECS/SDE (1991) clearly establish a useful, theoretical framework. They acknowledge the interdependence of curriculum and assessment. The need for ongoing communication among parents, teachers, and prospective teachers is underscored. Utilizing this professionally recognized document, it is possible to look at specific educational approaches to determine their value. The value of the Project Spectrum Model can be assessed within the strong framework adopted by NAEYC and NAECS/SDE.

Project Spectrum: A Viable Model

Spectrum began in 1984 at Harvard and Tufts Universities under the direction of Howard Gardner and David Feldman (Krechevsky, 1991; Ramos-Ford, Feldman, & Gardner, 1988). Gardner and Feldman discuss Spectrum's departure from Piaget's knowledge domains within the stages of cognitive development to include the recognition of domain-specific strengths. Feldman and Gardner both believe that preschool children have more distinctive intellectual strengths, talents, and learning styles than are revealed through psychometric testing (Ramos-Ford et al., 1988).

Framework For Evaluation

To be a viable model, the Project Spectrum Assessment Model should adhere to the guidelines adopted by NAEYC & NAECS/SDE (1991). The model's curriculum should be evaluated in relation to theory, content, planning, and perspectives on learning and development. Its assessment practices should provide the following: 1) opportunities to plan instruction and communicate with parents, 2) a method to identify individual children who may require special needs or intervention, and 3) a plan to evaluate how well a program meets its goals. Finally, curriculum content and assessment strategies should be inter-related (NAEYC & NAECS/SDE, 1991).

Curriculum

Research (e.g. Gardner, 1991; Gardner & Veins, 1990; Krechevsky, 1991; Ramos-Ford, Feldman, & Gardner, 1988; Wexler-Sherman, Gardner, & Feldman, 1988) supports the contention that Project Spectrum provides a curriculum rich in engaging materials that stimulate a range of intelligences in children. Children have ample opportunity to explore various learning areas that embody valued societal roles and draw upon relevant combinations of intelligences. Krechevsky (1991) identifies the areas of cognitive ability as numbers, science, music, language, visual arts, movement, and social. Veins (1990b) feels there is a strong focus on nurturing children's strengths, interests, and sense of well-being in a school setting.

Assessment

Project Spectrum advocates a more truthful indicator of children's abilities. In a naturalistic approach to assessment, Veins (1990a) states that Spectrum seeks to provide parents and teachers with a broader profile of a child's abilities, skills, and interests. Krechevsky (1991) cites the following unique assessment features: 1) blurring the line between curriculum and assessment; 2) embedding assessment in meaningful, real world activities; 3) using measures that are intelligence-fair; 4) emphasizing children's strengths; and 5) attending to stylistic

dimensions of performance. Krechevsky (1991) provides a full description of each of these assessment features.

Assessment is documented using observation checklists, score sheets, portfolios, and tape recordings (Krechevsky, 1991; Krechevsky & Gardner, 1990). At the end of the school year the assessment of each child is compiled in an individual profile. Ramos-Ford et al., (1988) report that the profile addresses strengths and weaknesses within a child's own range of capabilities as well as identifying strengths that stand out in relation to the overall class. Each child's Spectrum Profile is written with non-technical descriptions of the child's participation in project activities along with the "working styles" exhibited (Gardner & Veins, 1990; Krechevsky, 1991; Ramos-Ford et al., 1988). Ramos-Ford and Gardner (1990) refer to "working styles" as "level of engagement, persistence, and distractibility" (p. 15).

Based on the findings of the Spectrum Profile, Ramos-Ford et al., (1988) report that the parent conference is well received by parents and is of value in facilitating communication between home and school. Parents are given a copy of the profile with informal suggestions for follow-up activities to enhance their children's strengths.

Curriculum and assessment practices used in the Project Spectrum Model are developmentally appropriate according to Gardner and Veins (1990), Krechevsky (1991),

Wexler-Sherman, Gardner, and Feldman (1988). Because Project Spectrum is a pilot study, however,the assessment findings, though informative and useful, are inconclusive (Hatch & Gardner, 1990; Krechevsky & Gardner, 1990).

Krechevsky (1991) states that the Project Spectrum assessment identifies independent intellectual strengths and/or weaknesses of each child. Krechevsky (1991) also notes that the Spectrum approach to assessment identifies strengths not identified by parent or teacher. It was found, for example, that a strength in one area might facilitate performance in another area. A child who appears strong in storytelling ability might score low in bodily-kinesthetic skills, unless scored in relation to his or her storytelling skills (Krechevsky, 1991).

In a study comparing the Spectrum assessment with the Stanford-Binet test, Hatch and Gardner (1990) report a limited overlap between performances on the Stanford-Binet and the Spectrum assessment. A significant correlation of Spectrum scores with overall IQs did not result at this particular time.

Hatch and Gardner (1990), as well as Krechevsky and Gardner (1990) acknowledge the need for larger samples to verify findings and establish validity and reliability. Gardner (1991b) states, "Spectrum materials can be seen as potentially shaping teacher understandings and consequently

affecting teacher practices in ways that we hope will foster the development of individual potential" (p. 99).

Conclusion

This review of the literature underscores the need for appropriate assessment of preschoolers. As we have seen, one promising approach, the Project Spectrum Assessment Model, is built on the research of Gardner's Theory of Multiple Intelligences. It is consistent with the Guidelines for Appropriate Curriculum and Assessment in Programs Serving Children Ages 3 Through 8 as developed by NAEYC and NAECS/SDE. More research is needed on the Spectrum Assessment Model to strengthen the current findings. Just how adaptable the model is to other classrooms is still unknown. Whether or not it can be implemented by preschool teachers untrained in Spectrum methods remains unclear. Answers to these questions must be found if educators are to assess new approaches to learning. NAEYC and NAECS/SDE (1991) emphasize the importance of evaluating existing curriculum and assessment practices. Therefore, the Spectrum model merits evaluation and research in this regard.

CHAPTER III

THE STUDY

Introduction

This study utilized Harvard University's Project Spectrum Assessment Model as a framework for evaluating parent-teacher conferences. Specifically, it looked at parents' and teachers' attitudes about the Spectrum Model when utilized in parent-teacher conferences.

Project Spectrum has implemented the assessment model in a lab school setting (Eliot-Pearson Children's School) where researchers were available to conduct many of the assessment activities. In contrast, the teachers who conducted this study had no previous experience or training with the Project Spectrum Assessment Model.

The purpose of the study was to evaluate the usefulness of the Spectrum model as a framework for planning and conducting parent-teacher conferences in a teacher-directed, non-university setting. The Spectrum Activities Handbook (Feldman & Gardner, 1987) was used to implement the assessment model. The Spectrum model has been studied and evaluated by teachers and researchers familiar with the approach and its instrumentation (Krechevsky, 1991). This study sought to evaluate the Spectrum Assessment Model in a preschool setting where the teachers had no previous experience or training with Project Spectrum.

Methodology

Sample

The sample for this study included the two Winter Club Preschool teachers and the parents of the 20 children enrolled in the program. Parental participation in the study was voluntary and both mothers and fathers were encouraged to participate.

The Winter Club Preschool is a half-day program that operates Monday through Friday from September to June. The program serves children from 3 to 5 years of age. The parents of the children are from upper-middle-class homes and are predominately college-educated professionals.

Instrumentation

Several questionnaires were utilized in this study to assess the key variables. The key variables are: 1) parents' knowledge of Howard Gardner's Theory of Multiple Intelligences; 2) parents' attitudes regarding parent-teacher conferences when the Project Spectrum Assessment Model is utilized as a conference framework; and 3) teachers' attitudes about the usefulness of the Project Spectrum Assessment Model.

Parents' knowledge. Parents' Knowledge of Howard Gardner's Theory Of Multiple Intelligences is an instrument designed by the researcher to measure parents' knowledge of Howard Gardner's Theory. It was administered as a pretest and a posttest questionnaire (see Appendix A). The

questionnaire includes 11 questions relating to Howard Gardner's Theory of Multiple Intelligences. There are nine questions which ask parents to give examples of the different components of Gardner's Theory. The range of scores is from 0 to 11, with a high score indicating greatest familiarity with the theory.

Parents' attitudes. Parents' attitudes about the Project Spectrum Assessment Model as a framework for parent-teacher conferences was measured by two instruments designed by the researcher. The instruments assessed parents' preferences for conference discussion topics and parents' overall evaluation of the conference.

The first instrument is a Parent Conference Needs Assessment which was designed to measure the topics parents are most interested in discussing at a parent-teacher conference. Parents were asked to check the three items most important to them regarding parent-teacher conferences (see Appendix B).

The second instrument, Parent Conference Evaluation, includes 11 questions designed to measure the parents' evaluation of the usefulness of the Project Spectrum Assessment Model as a conference tool (see Appendix C). It uses a varied-response format. Questions pertaining to the parents' expectations for the conference and their awareness of their child's development were measured on a Likert-type scale. The range of possible scores is from 0 to 5 per

question. There is one open-ended question included which was analyzed separately by the researcher.

Teachers' attitudes. The teachers' attitudes were measured by a questionnaire written by the researcher. Questions for Teachers' Tape Recorded Interview includes six open-ended questions addressing the usefulness of the Project Spectrum Assessment Model (see Appendix D). The researcher used item analysis in narrative form to analyze the content of the taped interview.

Instructional Plan

The Project Spectrum Activities Handbook (Feldman & Gardner, 1987) was used to conduct the individual child assessment portion of the study (see Appendix E for sample items). The handbook provides details for implementing the Spectrum Assessment Model. It provides specific assessment activities and includes score sheets necessary to create individual profiles for each child.

Before the school year began, the two teachers involved in the study met to familiarize themselves with the Project Spectrum Activities Handbook (Feldman & Gardner, 1987). All of the materials needed to conduct the activities were obtained before September, 1992.

At the beginning of the 1992-1993 school year, six domains of activities were established in the classroom as detailed in the Project Spectrum Activities Handbook (Feldman & Gardner, 1987). The domains were movement,

music, mathematics, language, social, and science. Within the first five months of the school year, the teachers assessed each of the 20 children as they engaged in activities within the six specified domains.

In early November, the Winter Club Preschool conducted a parents' night. The researcher used a portion of the evening to acquaint the parents with Howard Gardner's Theory of Multiple Intelligences. The teachers presented a series of 80 slides, (taken by the researcher) capturing the children engaged in classroom activities. These slides provided examples of the seven intelligences and specific working styles. For the parents, handouts were provided, books were made available, and a time was set aside for questions and answers.

Data Collection Procedures

At the beginning of the school year, a parents' coffee was held to inform them about the Winter Club Preschool program. At that time, the proposed study was briefly explained and a questionnaire was distributed to the parents. This questionnaire measured the parents' knowledge and understanding of Howard Gardner's Theory of Multiple Intelligences (Appendix A). Voluntary participation was encouraged. Parents unable to attend the coffee were mailed the questionnaire with a cover letter explaining the study and the purpose of the instrument (see Appendix F).

Prior to the scheduled conferences in January, the parents were given a Parent Conference Needs Assessment. Both parents were encouraged to participate in this assessment. They were asked to complete the instrument and return it to the researcher before the conference. This assessment measured the topics parents were most interested in discussing at a parent-teacher conference (Appendix B).

In early January 1993, a Preschool Assessment Profile form was designed by the researcher as a tool for documenting a child's profile. This assessment profile reflected a child's use of the seven intelligences in a classroom setting (see Appendix G). Portfolios were also compiled on each child to provide parents with examples of their child's work. The portfolios included: art work, creative writing, and photographs taken by the teachers.

In the middle of January 1993, parent-teacher conferences were conducted. The Spectrum Assessment Model was utilized as a framework for planning each conference. At the completion of each conference the parents were given a questionnaire to complete. This questionnaire measured parents' attitudes regarding parent-teacher conferences and their perception of the benefits gained by utilizing the Spectrum Model (Appendix C). Accompanying the questionnaire was the posttest, Parents' Knowledge of Howard Gardner's Theory of Multiple Intelligences (Appendix A). A box was provided outside of the classroom for parents to return the

questionnaires. Every attempt was made to maintain anonymity.

Following the completion of all parent-teacher conferences, the teachers met to specifically discuss their attitudes on the overall value of the Spectrum Model (Appendix D). This meeting was tape recorded to facilitate accuracy in interpreting the findings.

At the end of January, a letter was sent to all parents thanking them for their participation in the study. It was reiterated that the findings of the study would be shared with all interested parents (Appendix G).

Data Analysis

This study utilized both quantitative and qualitative analyses. The quantitative analysis included a paired t-test to discern if there were statistically significant differences in the mean scores between the pretest and the posttest administration of the Parents' Knowledge of Gardner's Theory of Multiple Intelligences questionnaire.

Descriptive statistics were used to summarize the results of the data obtained from the Parent Conference Needs Assessment. Percentages were noted reflecting the topics parents wanted covered in a parent-teacher conference.

Item analysis and percentages were narratively reported on the data collected from the Parent Conference Evaluation criteria. Information on open-ended questions was summarized

and patterns of responses were discussed. The data from the Teachers Tape Recorded Interview was summarized in narrative form.

Findings and Interpretation

The findings and interpretation of this study are organized into four topics. The topics are: Parent Conference Needs Assessment, Parent Conference Evaluation, Teachers' Overall Evaluation, and Parents' Knowledge of Howard Gardner's Theory of Multiple Intelligences. The results for each of these topics are reported independently with a brief interpretation included by the researcher.

Parent Conference Needs Assessment

Prior to parent conferences, 40 parents were given a Parent Conference Needs Assessment to complete. The response to the assessment was 68%. The parents were asked to select from a list of seven topics the three topics they felt would be most important to discuss at a parent-teacher conference. Table 1 shows the results of the Parent Conference Needs Assessment. All of the parents indicated as one of their choices the item ,"My child's developmental strengths and weaknesses." The second most popular topic of interest was "What I can do to work with my child at home to enhance his/her development." Two topics were selected as a third area of importance to parents, "My child's progress in academic areas of the curriculum" and "How my child gets

along with other children at school." Table 1 demonstrates that 48% of the parents chose these topics.

Table 1

Summary of Parent Conference Needs Assessment (N=27)

Item	Rank	f	%*
My child's developmental strengths and weaknesses	1	27	100
What I can do to work with my child at home to enhance his/her development	2	20	74
My child's progress in academic areas of the curriculum	3	13	48
How my child gets along with other children at school	3	13	48
What my child's working style is at school	4	4	15
How my child gets along with the teachers at school	5	2	8
How my child spends a typical day in the classroom	5	2	8

* indicates the percentage of parents who chose this statement as one of their three choices

The information gathered from this survey was useful in the development of a parent-teacher conference form (Appendix G) and in the preparation for actual conferences.

Information about their child's developmental strengths and weaknesses was chosen by 100% of the parents. This high percentage not only indicates that parents are focused on their child's developmental strengths and weaknesses, but is may also imply that parents are more interested in a developmental approach due to the enriched curriculum provided by the Project Spectrum Model.

Information about what to do with a child at home was selected by 74% of the parents. This percentage expresses the parents' vested interest in their children. They want to be certain they are providing the best developmental environment for them. If a child's developmental strengths and weaknesses are combined with "what to do to work with my child at home to enhance his/her development," he/she is provided with a strong opportunity to grow more fully in all areas of child development.

Parent Conference Evaluation

The first section of the parent evaluation included five questions asking parents to assess aspects of the parent conference. Their assessment was scored on a scale from 1 (not useful) to 5 (very useful). Twenty parents attended conferences; 19 of these parents responded to the questionnaire.

In response to statement #1, "The Project Spectrum Assessment Model when used as a framework for a parent conference," 74% of the parents rated the model as "very useful." The remaining 26% of the parents scored the model with a 4 on the continuum. One can conclude that, in general, parents were very pleased with the Project Spectrum Assessment Model. In response to statement #2, "My expectations for this conference," 84% rated their expectations as fully met. The remaining 16% scored the statement with a 4 on the rating scale. Again, the parents were predominantly very satisfied in regards to their expectations for the conference. Statement #3, "The information received about my child at this conference," was rated very helpful by 89% of the parents. Those who did not find it very helpful rated the statement with a 4. In response to statement #4, "I prefer this approach to the approach used in other parent-teacher conferences I have attended," slightly over one half (55%) strongly agreed. The remaining 45% scored the statement either a 3 or 4 (28% indicated 4). Parents verbally commented to the researcher that this particular statement was difficult to answer. They said they were very pleased with the conference, but indicated that previous conferences had been very satisfactory, as well. If the parents had selected 5 on the rating scale, they felt it might have implied dissatisfaction with previous conferences. The results of

this portion of the evaluation indicated that parents were very satisfied with the approach and that their expectations had been met.

In response to the open-ended question #5, "What was the most meaningful part of this conference for you?" parents indicated gratitude and satisfaction. To quote one parent, "all aspects of my child's day in the classroom are explained. The words used are always positive which makes my child and me as a parent, feel great!" Another parent stated, "They have observed her and are very involved in her classroom life and attuned to her needs." A recurring comment that reflected the importance parents placed on affirmation of the way they see their child was, "I received affirmation of the way I see my child and comfort knowing that my assessment is consistent with the teachers." Several parents appreciated receiving concrete examples of their child's "style of learning" and how he/she relates to others.

This section of the evaluation was useful in confirming the value of the study. It also provided feedback on parents' attitudes about the parent-teacher conference. An element of bias may exist because the open-ended question in some instances removed the anonymity from the evaluation.

The second portion of the parents' evaluation asked parents to comment on particular topics discussed during the conference. There were six topics which asked parents to

indicate their opinion on a continuum from 1 "Completely new to me" to 3 "Not new to me at all."

In response to topic #1, "My child's strengths and weaknesses with respect to the seven intelligences," 63% of the parents indicated that it was somewhat new to them; 26% stated that it was not new to them at all. In response to topic #2, "My child's working style," 79% of the parents responded that this item was not new to them at all. The remaining 21% indicated that it was somewhat new to them. Question #3 and #4 "Activities that most interest my child," and "Activities that least interest my child," received similar responses from the parents. In the areas of greatest interest, 68% of the parents answered that the information was not new to them at all. In the areas of least interest, 69% indicated that the information was not new to them at all. No one indicated in either area that the information was completely new to them. In response to question #5, "How my child relates to his/her classmates," 53% responded that the information learned was somewhat new to them. The remaining 47% found the information to be not new to them at all. Finally, in response to question #6, "Activities for encouraging my child's development at home," the sample was equally divided; 50% found the information to be somewhat new to them while 50% found the information to be not new to them at all.

In summary, it would appear that much of the information covered in the parent-teacher conference was not new information to the parents. The inference given is that parents know their child or perhaps they may want the researcher (their child's teacher) to think that they know their child. In the open-ended question in the first part of the questionnaire, parents repeatedly stated that the most meaningful part of the conference was the affirmation of the way that they see their child. This would be consistent with the findings in the second part of the survey. Overwhelmingly, parents responded that the information was either somewhat new or not new to them at all.

Question #1, "The information regarding my child's strengths and weaknesses with respect to the seven intelligences" provided new information to 63% of the parents. On the Parent Conference Needs Assessment parents indicated (100%) that "My child's developmental strengths and weaknesses" was important. Consistent with the findings, 89% of the parents indicated in the first section of the evaluation (question #3) that the information they received about their child was very helpful. These high percentages would seem to justify the usefulness of the Project Spectrum Assessment Model.

The findings in the Parent Conference Evaluation explain how parents can state that a high percentage of the

information that they received at the parent-conference was not new to them, yet they were fully satisfied with the conference. They indicate knowledge was gained in areas of interest (my child's strengths and weaknesses) and they were able to reaffirm their beliefs in areas where they felt they already know their child. The end result is satisfied parents (89%).

Parents's Knowledge of Howard Gardner's Theory of Multiple Intelligences

Twenty parents were given a pretest on Howard Gardner's Theory of Multiple Intelligences. Seventeen parents completed the test and returned it to the researcher. The results of the pretest indicated that the parents had limited knowledge of both Howard Gardner and his Theory of Multiple Intelligences.

On a scale of 0 - 11, the mean score was 3. The scores ranged from 0 - 7 (see Table 2).

Seventeen parents completed the posttest. The mean score was 6.06 with a range in scores from 1 - 10. Table 2 summarizes the results of the pretest and posttest comparison of Parents' Knowledge of Howard Gardner's Theory of Multiple Intelligences. As noted on this table, there was a mean increase of 3 points. The result of a t-test statistical analysis indicated a statistically significant increase occurred between the pretest and the posttest (t = 3.38, $p < .002$).

Table 2

Pretest/Posttest Comparison of Parents' Knowledge of Howard Gardner's Theory of Multiple Intelligences (N=17)

	M	S.D.	Range of Scores
Pretest	3.00	2.29	0 - 7
Posttest	6.06	2.95	1 - 10

$t = 3.38$, $p < .002$

Three meetings were scheduled to learn more about Howard Gardner and the Theory of Multiple Intelligences. Some of the 17 parents attended all three meetings. Some parents attended only two meetings and a few parents were present only at the parent-teacher conference. All 17 parents attended the parent-teacher conference. The difference in participation at the scheduled meetings probably accounts for the wide range in scores reported on the posttest.

Although parents were very cooperative throughout the study, they seemed reluctant to provide examples for the seven intelligences. Concern for lack of anonymity was perhaps a factor, although every attempt was made by the

researcher to alleviate this concern. Parents might have decided that the test was too detailed and time consuming to complete.

It is also noteworthy that on the posttest, only four parents correctly identified working styles. However, on the Parent Conference Evaluation form, 79% of the parents indicated that their child's working style was, "Not new to me at all." It is possible the parents defined "working style" differently in each of the assessments. Perhaps they did not comprehend the conference category, "Working Style" as relating to the Project Spectrum Assessment Model (Appendix G).

Teachers' Evaluation

Both teachers found the Project Spectrum Assessment Model useful as a framework for conducting parent-teacher conferences. Many of the activities described in the Project Spectrum Activities Handbook (Appendix E) were useful in the assessment process. If modified, they were interesting and stimulating to the children. The teachers will continue to use some of the activities in the future. The storyboard, the food grinder, the nuts and bolts activity, the water activities, the photo board, and a modified version of the week-end news will all become part of the curriculum.

The Project Spectrum Activities Handbook (Feldman & Gardner, 1987) is still undergoing revisions. The teachers

in this study found that the activities, as presented in the handbook, were too technical and too detailed to execute while trying to teach. Many of the activities were age appropriate for four and five year olds, but not appropriate for three year olds. The social questionnaire, for example, was too difficult for three-year-old children to comprehend; they are still too egocentric at that age. The math activities were also geared to older children. Most of the score sheets were too cumbersome and too time consuming to implement. The teachers will continue to introduce the previously mentioned activities taking into account the need for teacher validated assessment in contrast to the one-to-one clinical assessment presented in the handbook.

As an outcome of the teachers' inability to utilize the score sheets provided in the handbook, an assessment grid was designed by the teachers (see Appendix I). The grid represents the seven intelligences and allows the teachers to observe each child and identify which intelligences he/she employs. The grid can be used to observe a particular activity or to observe a child in the overall classroom setting. The grid, anecdotal observations, photographs, and a portfolio were combined to assess the child for the parent conference. This was felt to be the best way to adhere to the theory presented in the Spectrum Assessment Model.

The teachers agreed that the Project Spectrum Assessment Model was a good springboard for further development of curriculum and assessment methods. They both experienced personal growth in observational skills and gained a clearer focus on each child's strengths and weaknesses. A major outcome of the study has been the design of an evaluation grid (Appendix I) and a parent-conference form (Appendix G) which reflect the Theory of Multiple Intelligences. Both of these tools were received positively by parents and teachers,and will be used in the future.

Conclusion

This study evaluated the Project Spectrum Assessment Model as a framework for parent-teacher conferences. Two teachers implemented the model with the aid of portions of the Spectrum Activities Handbook (Feldman & Gardner, 1987). Parents were informed about Howard Gardner, the Theory of Multiple Intelligences, and Project Spectrum. After five months of implementation, parent-teacher conferences were conducted incorporating the new method of assessment. The parents' and the teachers' attitudes were measured to determine the usefulness of the model as a framework for parent-teacher conferences.

The results of the study support the findings reported in Krechevsky (1991). Parents and teachers approved using

the Project Spectrum Assessment Model as a framework for conferences. The parents (74%) indicated that the model proved to be useful for the parent conference. Over half of them preferred this approach to previous conference approaches. The teachers expressed satisfaction with the model. Many of the activities now have been incorporated into the curriculum. The teachers were pleased with the parent-teacher conferences and with the parents' evaluations. However both teachers remarked that the handbook was too technical and cumbersome to implement as teachers.

A prospective study might include a larger sample to increase the validity of findings. Refined assessment methods could be incorporated into future evaluations of the Spectrum Assessment Model. These methods would be designed to provide teachers with a more viable means of validating the usefulness of the model in a preschool classroom . Perhaps future research needs to compare present parent-teacher conference methods with the Spectrum Model.

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APPENDICES

PARENTS KNOWLEDGE OF HOWARD GARDNER'S

THEORY OF MULTIPLE INTELLIGENCES

Directions: Please answer the following questions by placing an (X) in the appropriate space.

1. Do you think that I.Q. tests are the best way to assess the intelligence of a child?

   Yes____ No____ Not Sure ____

2. Have you ever heard of Project Spectrum?

   Yes ____ No ____

3. Are you aware of Howard Gardner's Theory of Multiple Intelligences?

   Yes ____ No ____

4. Can you give an example of:

   a. Linguistic intelligence _____

   b. Logical-Mathematical intelligence _____

   c. Spatial intelligence _____

   d. Musical intelligence _____

   e. Bodily-kinesthetic intelligence _____

   f. Interpersonal intelligence _____

   g. Intrapersonal intelligence _____

5. Can you give examples of different working styles as defined by Gardner's Theory of Multiple Intelligence?

   a. _____

   b. _____

PARENT CONFERENCE NEEDS ASSESSMENT

Directions: Please place an (X) on the line next to the 3 most important topics you expect to discuss at a parent-teacher conference.

_____ My child's progress in academic areas of the curriculum.

_____ What my child's working style is at school.

_____ How my child gets along with other children at school.

_____ How my child gets along with the teachers at school.

_____ My child's developmental strengths and weaknesses.

_____ How my child spends a typical day in the classroom.

_____ What I can do to work with my child at home to enhance his/her development.

PARENT CONFERENCE EVALUATION

Directions: Please answer 1 to 5 in the following continuum for each of the items below.

1. The Project Spectrum Assessment Model when used as a framework for a parent conference is...

   Not Useful 1 2 3 4 5 Very Useful

2. My expectations for this conference were...

   Not Met 1 2 3 4 5 Fully Met

3. The information received about my child at this conference was...

   Not Very Helpful 1 2 3 4 5 Very Helpful

4. I prefer this approach to the approach used in other parent-teacher conferences I have attended.

   Strongly Disagree 1 2 3 4 5 Strongly Agree

   (If this is your first parent-teacher conference leave blank).

5. What was the most meaningful part of this conference for you?

Directions: Please circle on the continuum provided your feelings about the topics discussed during the parent-teacher conference.

The information regarding...

1. My child's strengths and weaknesses with respect to the seven intelligences was...

Completely New To Me Somewhat New To Me Not New To Me At All

2. My child's working style was...

Completely New To Me Somewhat New To Me Not New To Me At All

3. Activities that most interest my child were...

Completely New To Me Somewhat New To Me Not New To Me At All

4. Activities that least interest my child were...

Completely New To Me Somewhat New To Me Not New To Me At All

5. How my child relates to his/her classmates was...

Completely New To Me Somewhat New To Me Not New To Me At All

6. Activities for encouraging my child's development at home were...

Completely New To Me Somewhat New To Me Not New To Me At All

QUESTIONS FOR TEACHERS' TAPE RECORDED INTERVIEW

1. Overall, what is your opinion of the Spectrum Assessment Model? Did you find it cumbersome? Helpful?

2. How did you feel the children reacted to the activities introduced?

3. Should we continue to use the Spectrum Assessment Model as a framework for our parent-teacher conferences? Why?

4. Should we continue to utilize Howard Gardner's Theory of Multiple Intelligences as a framework for our parent-teacher conferences? Why?

5. Should we consider utilizing the Spectrum Assessment Model in other ways in our classroom?

6. Briefly summarize your impressions.

Project Spectrum Activities*

Movement Domain: The Indoor Movement Curriculum and Score Sheets

Music Domain: The Singing Activity and Score Sheets

Mathematical Domain: A modification of the Dinosaur Game

Language Domain: Storyboard Activity, Weekend News, and Score Sheets

Social Domain: A modification of Playground Model, Social Questionnaire, Photo board, and Score Sheets

Science Domain: Nuts and Bolts, Food grinder, Water Activities, and Score Sheets

* A full description of the activities can be found in the Project Spectrum Activities Handbook (Feldman & Gardner 1987).

September 9,1992

Dear Parents,

I am sorry you were unable to attend our preschool coffee. I missed having a chance to chat with you and look forward to seeing you on Monday, September 14th. Both Diane and I are eager to get our school year underway.

As you may know, I am currently studying for a masters degree in early childhood education at National-Louis University. My research paper involves a theory of intelligence developed by Dr. Howard Gardner and Dr. David Feldman. I will be incorporating parts of their theory into our classroom during the first four months of school.

As part of my study I will be asking you to fill out some questionnaires. Enclosed is a questionnaire that I handed out at the preschool coffee. Rest assured there will be questions that you may not know the answers to. I would appreciate it if you would please complete the questionnaire and return it to me on Monday, September 14th.

If you have any questions I will be happy to answer them for you. When my study is completed in the Spring of 1993, I will be glad to share my findings.

I cannot wait to begin our year! I look forward to seeing you and thank you again for your support and cooperation.

Sincerely,

Nancy Rozak

PRESCHOOL ASSESSMENT PROFILE

Name: Brian Smith*
Age: 4 Years, 9 months

Social Development: Tremendous growth. Plays well in a group or alone. Knows his own needs. Self directed in his play. Not as dependent on friends. Very sensitive and kind to other children. Very well liked. Shares well, resolves conflict.

Emotional Development: much stronger emotionally. Very happy and secure. Can talk through his frustration. Strong sense of fairness. Very proud of his accomplishments. Willing to risk, try new things.

Large + Small Motor Development: Large motor skills are improving with ice skating. Small motor needs improvement. We will be working on pencil and paper skills in the next few months.

Working Style: Brian is easily engaged and focused on his activities. He is very persistent and demonstrates a planful approach. He responds to visual, auditory, and kinesthetic cues.

Language Development: Participates and uses full sentences but is very difficult to understand. Doesn't give up trying to be understood. Has a very good memory and good auditory skills. Possible Perceptual Problem? Beginning to back away

from what is difficult. Confuses letters with numerals (B + 8)

Spatial Development: Good spatial skills, a wonderful builder. Uses water table, Playdough, food grinder, blocks, puzzles. Loves art activities

Logical-Mathematical Development: Difficulty in numeral recognition (perceptual ?) Can sort, classify, sequence, match, compare, contrast, count. Understands logical inferences. Knows shapes and sizes.

Musical Development: Likes music. Participates on circle. Learns songs quickly. Makes up songs and will sing them for the class. Loves the listening corner. A good sense of rhythm.

Profile: Brian is a very kind, thoughtful little boy. He is very eager to learn and persists even when the task is difficult (e.g. Speech). He is patient and not easily frustrated which makes it easy to work with him. He loves school and his friends and everyone likes him!

* a fictitious name has been used to assure anonymity. The evaluation is actual.

February 4, 1993

Dear Parents,

Thank you for the time you have given to assist me in my research on Howard Gardner's Theory of Multiple Intelligences. I have completed my study and I will now be analyzing the data. I will be most happy to share my findings with you when I complete the analysis. If you have not returned the questionnaires I gave you following the conference, I would appreciate your returning them as soon as possible. A box is provided in the hallway, outside of our classroom, for your convenience.

The study proved to be both interesting and worthwhile. Again thank you so much for your cooperation and support.

Sincerely,

Nancy Rozak

OBSERVATIONAL GRID

NAME: Elizabeth Doe*

DATE: Dec. 9, 1992

OBSERVER: Nancy Rozak

Background

Elizabeth is 4 yrs. 6 mos.. She is a female, in good health and has a slight lisp in her speech.

Methodology

The purpose of this observation was to determine how Elizabeth learns in a classroom setting. Howard Gardner's Theory of Multiple Intelligences was used as a framework for this observation.

The observation took place in a well equipped classroom of 20 children. The children were 3,4, and 5 years of age. There were two teachers present.

The method of observation was a running record, by one observer, on three separate occasions. The observations lasted approximately 2 hours on each occasion. The results from the running record were then fit into the framework of Gardner's Theory of Multiple Intelligences. See the attached page for the grid used to assess the observation.

Results

The results showed Elizabeth to be a child who uses all seven intelligences defined by Gardner. Overall, she seems to have a balanced use of the seven intelligences with the exception of intrapersonal. Elizabeth is a very

interpersonal child. When given the choice she will choose to be with others. In the three days she was observed she displayed 11 examples of linguistic learning. She displayed 11 examples of bodily/kinesthetic learning. She displayed 8 examples of spatial learning. There were 3 examples of musical learning. Although each example was teacher directed, Elizabeth participated fully. Nine times Elizabeth displayed logical/mathematical intelligence. When the interpersonal and intrapersonal intelligences were assessed there were 30 examples of interpersonal learning and 8 intrapersonal examples. Elizabeth clearly favors interpersonal learning.

Elizabeth learns best with others. She enjoys working in group situations. In helping her develop her readiness skills for kindergarten (alphabet,numerical recognition, motor skills, and initial printing of her name, etc.), she will learn best in a group setting. It was also very insightful and positive to see how well Elizabeth used the classroom and how diverse her use of the intelligences is at this point.

Elizabeth's learning style during this period of observation was: focused, easily engaged, she responds to visual, auditory and kinesthetic cues.

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* A fictitious name has been used to assure anonymity. The observation actually occurred.

Observation:
12/4; 12/5; 12/12 Elizabeth

LINGUISTIC	BODILY/ KINESTHETIC	SPATIAL	MUSICAL	LOGICAL/ MATHEMATIC	INTER-PERSONAL	INTRA-PERSONAL
Reads a book on the circle with Colby + Parker	Tried on Angel wings briefly.	Traced pictures from a storybook with her teacher	Sings Mary, Mary Rocks her Baby Knows words	Recognizes # 4 for Calendar, places it accurately	4	1
Listens, eyes fixed on teacher at story time	Dress up as a Shepherd with a group of friends	Cut out ornaments for the tree with friends	Sings Better Watch out Knows all words	Counts accurately and Sequentially	5	0
Verbally discusses with teacher playdough castle she is building	Played in block Area with friends built and played in a house.	Built a house with blocks	Sings all words to Who fed the Chickens	Draws a spider at the art table and gives it 8 legs (with Parker)	5	0
Listens quietly Sitting attentively to teacher at story time	Played with playdough with Megan. Built a castle	Spots a shaped block for Parker while building with the brick blocks w/ a friend	Able to keep good rhythm in Walk + Walk + Stop	Can Count how many children are missing on Circle	4	1
Discusses after story her brother closing her in her room	Played in house-Keeping Corner	Built a playdough castle with Megan it had many Parts.		Draws a circle around Xmas Card as instructed by the teacher	2	1
Printed her name at Art table with Megan	made a paper wreath in art (cut, glued)	Worked several Puzzles with me.		When questioned "Who has more blocks" She knew it was the same	3	1
Sang all words + motions to Who Feeds the ducks + Walk + Walk ...	Appropriate motions in Song "Who Fed the Chickens," Walk + walk".	Uses her own space on circle during Songs with motion. Walk walk, walk.		When tested "Who has more playdough she said "Some I can make mine look like yours"	3	1
Verbally directed building a car in the block corner	Walking from block to block, using balance - with a friend	Builds a car with friends		Able to fill wreath with specified # of Pom Poms	3	1
Played on the floor for a 30min. Video gave full attention never got up.	Builds in block Corner in a group	Draws circles around Christmas Cards to make ornaments			2	1
Verbally helped Parker locate a Colored Shaped block	Sings with Appropriate motions. "Mary Rocks her Baby	Cuts out ornaments on the lines She drew.			2	1
					34	8

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